**K-5 Math Lesson Plan**

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| **Teacher: Rickard** | | | **Grade: 5** | | | **Date(s)**: August 2012 |
| **Unit Title:**   |  | | --- | | Unit 1- Understand the Decimal Place Value System | | | | | **Corresponding Unit Task:**   |  | | --- | | “Decimal Distractions” | | (Teach prior to task 2) | | | |
| **Essential Question(s):**  How do I read, write, and use decimals to the thousandths using standard form, word form, and expanded form? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**  Number tiles, white board, markers, and Place Value Mystery Number Heptagon (see below), definition chart | | **Student:**  Pencil, math journal,  number tiles, and Place Value Mystery Heptagon (see below) | | | Thousands, hundreds, tens, ones, tenths, hundredths, thousandths, standard form (base-ten numerals), expanded form, word form (number name) | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  √ 1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  √ 3. Construct viable arguments and critique the reasoning of others.  √ 4. Model with mathematics.  √ 5. Use appropriate tools strategically.  √ 6. Attend to precision.  √ 7. Look for and make use of structure.  √ 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**   |  | | --- | | **Read**, **write**, and **compare** decimals to thousandths.  a. **Read** and **write** decimals to thousandths **using** base-ten numerals,  number names, and expanded form, *e.g., 347.392 = 3 × 100 + 4 ×*  *10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).* | | | | | | |
| I Can Statement(s):   |  |  |  | | --- | --- | --- | | I can read decimals to the thousandths using base-ten numerals.  I can read decimals to the thousandths using number names.  I can read decimals to the thousandths using expanded form.   |  |  | | --- | --- | | I can write decimals to the thousandths using base-ten numerals.  I can write decimals to the thousandths using number names.  I can write decimals to the thousandths using expanded form.   |  | | --- | | I can use base-ten numerals to form decimals to the thousandths. | | | | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Tell your students that they are going to be “Math Detectives” today and they have to solve The Case of the Mystery Numbers!  Put the following on the board and have students copy the diagram in their math journal:  \_\_\_\_\_,\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ . \_\_\_\_\_ \_\_\_\_\_  Then give the following clues and have students create the mystery number.  This can be done using paper and pencil, and/or number tiles.   * Write 3 in the tens place. * Write 1 in the thousands place. * Write a 0 in the tenths place. * Write a 5 in the hundreds place. * Write a 9 in the hundredths place. * Write an 8 in the ones place. * What is the mystery number? 1,538.09   Teacher questions:  How do you read this mystery number? (students share with their shoulder partner)  What form did we read this number in? Standard form (base-ten numerals)  What are the other 2 forms we write with using numbers? word (base-ten numerals) and expanded  Today, we are going to practice how to read and write decimals to the thousandths using standard form (base-ten numerals), word from (number name), and expanded form. | | | | | |
| **Teacher Directed:**  Share definition chart with students and have students fill in the chart in their math journals as the teacher models it. ( See completed chart below) This can also be used as an anchor chart to be displayed in the classroom.    Representing Decimals:   |  |  |  | | --- | --- | --- | | Form: | Definition: | Example: | | Standard Form  (base-ten numerals) | The usual way or common way of writing a number using digits. | 8,712.593 | | Expanded form | A way of writing a number as the sum of the values of its digits to show place value | 8 x 1000 + 7 x 100 +  1 x 10 + 2 x 1 + 5 x (1/10) + 9 x (1/100)  + 3 x (1/1000) | | Word Form  (number name) | A way of writing a number using words | Eight thousand seven hundred twelve and five hundred ninety three thousandths | | | | | | |
| **Guided Practice:** Today, we are going to continue to find mystery numbers using number tiles and the Place Value Mystery Number Heptagon. ( See below) This activity can be completed whole class, small groups, or pairs. Have students draw a place value heptagon or give them a copy of the place value heptagon. Tell your students that you are going to call out 7 numbers from 0 to 9. They are to place that number anywhere on their heptagon. Each number can only be used one time. Once you have placed a tile on the heptagon it cannot be moved. Then have students write their mystery numbers and share them with their group, their partner, or the class. Next, have each student write their mystery number in word form (number name) and standard form (base-ten numerals) using their definition chart as a model. The teacher circulates the classroom to ensure students are practicing correctly. | | | | | |
| **Independent Practice:** We are going to continue to find mystery numbers using number tiles and the Place Value Mystery Number Heptagon. ( See below) Repeat the above process. Remind your students that you are going to call out 7 numbers from 0 to 9. They are to place the numbers anywhere on their heptagon. Each number can only be used one time. Once you have placed a tile on the heptagon it cannot be moved. Then have each student write their mystery number in standard form (base-ten numerals), word form (number name), and expanded form. If needed students can use their definition chart as a model. | | | | | |
| **Closing/Summarizing Strategy:**  **“**Ticket Out The Door” in the their journal have students write the standard form (base-ten numerals) of the following number: 4 x 100 + 3 x 10 + 5 x 1 + 2 x (1/10) + 6 x (1/100) + 7 x  (1/1000) = 435.267 | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| During guided and independent practice students in small groups/pairs can place their mystery numbers in ascending and descending order. Students and teacher can discuss which numbers created were the greatest or least. How do they know which number is the largest or smallest. What conclusions about decimal place value can they draw? Allow students to elaborate and help them make connections. | | | During guided and independent practice the teacher can tell students where to place each digit on the Place Value Mystery Number Heptagon and model as students work in their seats. Then teacher can model all or parts of how to write their number in word form (number name) and expanded form. | | | Review place value from hundred thousands to ones. Discuss how number values change when decimals are added to a number. Remind students that the decimal point is always read as “and.” Teacher can model numbers using base-ten blocks. |
| **Assessment(s):**   * Collect student journals and check “Ticket out the Door” for correctness. * Have students complete the following definition chart and decimal model filling in the missing information:   Representing Decimals:   |  |  |  | | --- | --- | --- | | Form: | Definition: | Example: | | ?  Standard Form  (base-ten numerals) | The usual way or common way of writing a number using digits. | 12.59 | | ?  Expanded Form | A way of writing a number as the sum of the values of its digits to show place value | ?  1 x 10 + 2 x 1 + 5 x (1/10) + 9 x (1/100) | | Word Form  (number name) | ?  A way of writing a number using words | Twelve and fifty nine hundredths |   The original example in the chart above can be increased in difficult based on the level of your students. | | | | | | |
| * **Teacher Reflection:** (Next steps?) What went well? * Student understandings/misconceptions * Specific notes about students’ thinking * What do I need to reteach/review tomorrow or in the future? * New ideas or changes for next time | | | | | | |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Place Value Mystery Number Heptagon

**D**

**E**

**C**

**I**

**M**

**A**

**L**

**P**

**O**

**I**

**N**

**T**

**Thousands**

**Hundreds**

**Tenths**

**Tens**

**Thousandths**

**Ones**

**Hundredths**

**Ones**

The Mystery Number is \_\_\_\_\_, \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_. \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_